

What is Claimed:

1. A method of image compression, comprising:
tracking a pool of pixel predictors;
selecting a subset of pixel predictors from the tracked pool; and
rebalancing the pixel predictor subset to locally adapt to image conditions.
2. The method of claim 1, wherein the pool of pixel predictors are assigned hit counters which are used to facilitate rebalancing.
3. The method of claim 1, wherein the pool of pixel predictors are tracked in two dimensions.
4. The method of claim 3, wherein the pool of pixel predictors include pixel locations.
5. The method of claim 4, wherein the pixel locations include a NE, a NEE, a NW, a N, a NWW, a W, and a WW pixel location expressed geographically relative to a pixel being processed.
6. The method of claim 1, wherein the pool of pixel predictors includes a last unmatched pixel, a cache pixel, a black pixel, a white pixel and a most common value pixel.
7. The method of claim 1, wherein the pool of pixel predictors tracked include continuous tone prediction algorithms.
8. The method of claim 7, wherein the continuous tone predictions algorithms are selected from the group of LOCO, MED, LINEAR 4, LINEAR 5 and GAP.
9. The method of claim 1, wherein the method further includes incrementing a hit counter associated with each pixel predictor in the pool of pixel predictors when a match between a pixel predictor and processed pixel is found.

10. The method of claim 9, wherein the subset of possible pixel predictors is selected based on incremented hit counters.
11. The method of claim 10, further including using a pixel predictor from the selected subset having a highest incremented hit counter value as the first pixel predictor used for pixel predictions.
12. The method of claim 11, further including periodically rebalancing the hit counters.
13. The method of claim 12, further including rebalancing the selected subset after a set prediction interval, and rebalancing the hit counters when a first pixel predictor in the subset exceeds a specified limit.
14. A method of image compression, comprising:
 - communicating a number of pixel prediction values via a variable length code compression algorithm;
 - assigning a hit counter to each of a number of pixel predictors, each pixel predictor having one of the pixel prediction values;
 - tracking matches between pixel predictor values and a number of processed pixels in two dimensions;
 - incrementing the hit counters based on tracked prediction matches; and
 - selecting a number of pixel predictors having the highest hit counters for future pixel predictions.
15. The method of claim 14, wherein the method further comprises:
 - storing the incremented hit counters in a bit packing mechanism; and
 - storing a number of run counts and replacement counts as variable length code.
16. The method of claim 15, wherein a single bit is encoded to indicate a run command.

17. The method of claim 15, wherein a single bit is encoded to indicate a literal command.
18. The method of claim 15, wherein each pixel predictor includes a pixel predictor location that is unary coded.
19. The method of claim 15, wherein each run count is encoded as variable length Gamma Golomb (3) code.
20. The method of claim 15, wherein each replacement count is encoded as variable length Gamma Golomb (3) code.
21. The method of claim 14, wherein the method further includes encoding a last unmatched pixel prediction verbatim.
22. A method of image compression, comprising:
 - assigning a hit counter to each of a number of pixel predictor values;
 - tracking matched between pixel predictor values and processed pixels in two dimensions;
 - incrementing the hit counters based on tracked prediction matches; and
 - rebalancing the hit counters to locally adapt to image conditions.
23. The method of claim 22, wherein the method further includes communicating a number of pixel prediction values via a variable length code compression algorithm.
24. The method of claim 22, wherein the method further includes communicating a number of pixel prediction values via a fixed-bit code compression algorithm.
25. The method of claim 22, further comprising:
 - specifying a number of bit limits for encoding an indicator of a run command;
 - encoding a literal command;
 - encoding a prediction of a next pixel;
 - encoding a seedrow count; and
 - encoding a replacement count.

26. A computer readable medium having instructions for causing a device to perform a method of image compression, comprising:
 - assigning a hit counter to each of a number of pixel predictor values;
 - tracking matched between pixel predictor values and processed pixels in two dimensions;
 - incrementing the hit counters based on tracked prediction matches; and
 - rebalancing the hit counters to locally adapt to image conditions.
27. The computer readable medium of claim 26, wherein the method further includes communicating a number of pixel prediction values via a variable length code compression algorithm.
28. The computer readable medium of claim 26, wherein the method further includes communicating a number of pixel prediction values via a fixed-bit code compression algorithm.
29. The computer readable medium of claim 26, the method further comprising:
 - specifying a number of bit limits for encoding an indicator of a run command;
 - encoding a literal command;
 - encoding a prediction of a next pixel;
 - encoding a seedrow count; and
 - encoding a replacement count.
30. An imaging forming system, comprising:
 - a processor;
 - a memory;
 - a media marking mechanism;
 - interface electronics coupling the processor, the memory, and the media marking mechanism;
 - means for receiving compressed image data; and
 - means for two-dimensional image compression/decompression with pixel predictor rebalancing.

31. The system of claim 30, wherein the means for receiving image data includes a set of computer executable instructions operable on an image file format.
32. The system of claim 30, wherein the means for receiving the image data includes an I/O connection to send and receive image data.
33. The system of claim 30, wherein the means for image file compression/decompression includes a set of computer executable instructions for two-dimensional compression/decompression with dynamic pixel predictor rebalancing.
34. An image compression device, comprising:
 - a processor;
 - a memory operably coupled to the processor;
 - a compression module coupled to the processor and the memory;
 - an I/O port to send and receive data coupled to the processor and the memory;
 - and
 - logic on the device to conduct two-dimensional image compression with a number of pixel predictors.
35. The device of claim 34, wherein the device includes a number of hit counters, each associated with a different pixel predictor, the hit counters operable to be incremented when a match between a pixel predictor and processed pixel is found.
36. The device of claim 35, wherein at least one hit counter can be periodically reset.
37. The device of claim 36, wherein each hit counter has a total and wherein the total can be reset by dividing the total by a power of two.
38. The device of claim 34, wherein the number of pixel predictors are selected from the group including a number of set of pixel values and a number of compression algorithms.